

IN THE CLAIMS:

Please cancel Claim 50 without prejudice.

Please amend the claims to read as follows relative to the issued patent:

1. (Previously Amended) A water sculpture comprising:
a flow surface adjacent a platform or walkway with at least a portion thereof having a generally inclined slope;
at least one source of water for providing a sheet flow of water onto said flow surface such that said sheet flow of water flows upwardly onto said inclined slope and substantially conforms to said flow surface, said sheet flow of water having a depth of at least about 1cm; and
said flow surface having a shape adapted to simulate a desired wave form wherein at least a portion of said flow of water assumes an airborne trajectory over said walkway to form a tunnel-like passageway.
2. (Original) The water sculpture of claim 1, wherein said flow surface has a shape adapted to simulate an undulating unbroken wave.
3. (Original) The water sculpture of claim 1, wherein said flow surface has a shape adapted to simulate a white water bore.
4. (Original) The water sculpture of claim 1, wherein said flow surface has a shape adapted to simulate a spilling wave.
5. (Original) The water sculpture of claim 1, wherein said flow surface has a shape adapted to simulate a tunnel wave.
6. (Original) The water sculpture of claim 5, wherein said tunnel wave forms an awning of a building.
7. (Original) The water sculpture of claim 1, wherein said flow surface is adapted to produce a plurality of simulated wave forms.
8. (Original) The water sculpture of claim 1, wherein said flow of water is supercritical over at least a portion of said flow surface.
9. (Cancelled)
10. (Original) The water sculpture of claim 1, wherein said inclined slope is curved.
11. (Original) The water sculpture of claim 1, wherein said flow surface has at least a portion thereof having a generally downwardly inclined slope.

12. (Original) The water sculpture of claim 11, wherein said downwardly inclined slope and said inclined slope together form a curved half-pipe.

13. (Original) The water sculpture of claim 1, wherein said airborne trajectory is partially or fully directed by an outer enclosure or housing formed around said platform or walkway.

14. (Previously Amended) An apparatus for forming a water sculpture, comprising:
a flow surface with at least a portion thereof having a generally inclined slope;
a platform or walkway adjacent said flow surface;
at least one flow source for providing a sheet flow of water onto said flow surface such that said sheet flow of water flows upwardly onto said inclined slope and substantially conforms to the contours thereof and said flow of water on said flow surface has a relationship, characterized in terms of the Froude number, in a range of about 4 to 25; and

said flow surface further comprising an upwardly rising section sized and configured so as to induce separation of said sheet flow, whereby at least a portion of said sheet flow of water assumes an airborne trajectory over said platform or walkway producing visual, aural and/or aesthetic appeal.

15. (Original) The apparatus of claim 14, wherein said flow surface is supported by a concrete structure.

16. (Original) The apparatus of claim 14, wherein said flow surface has an upward concavity along a longitudinal cross section generally parallel to the direction of said flow.

17. (Original) The apparatus of claim 14, wherein said flow surface comprises a longitudinal cross section having an upward concavity transitioning to an upward convexity.

18. (Original) The apparatus of claim 14, wherein said flow of water on said flow surface comprises a combination of straight, concave and convex surfaces relative to the direction of said water flow.

19. (Cancelled)

20. (Original) The apparatus of claim 14, wherein said upwardly rising section comprises a wave forming structure obliquely positioned vertically and horizontally with respect to the direction of said flow of water on said flow surface, wherein said flow of water is directed upon said wave forming structure to create a spilling wave,

21. (Original) The apparatus of claim 14, wherein at least a portion of said flow of water has a velocity less than that needed to ascend over the top of said inclined slope of said flow surface, whereby a hydraulic jump is formed.

22. (Original) The apparatus of claim 14, wherein the kinetic energy of said flow of water is less than the potential energy of said flow at the top of said inclined slope of said flow surface.

23. (Original) The apparatus of claim 14, wherein the top of said inclined slope of said flow surface forms a ridge line.

24. (Original) The apparatus of claim 23, wherein a portion of said flow of water is provided at a higher velocity than another portion of said flow of water, wherein a cross-stream velocity gradient is formed, wherein said flow of water moving at said higher velocity flows over said ridge line, and wherein said flow of water moving at said lower velocity forms a hydraulic jump below said ridge line.

25. (Original) The apparatus of claim 24, wherein said ridge line has an increasing elevation from one side of said flow surface to another.

26. (Original) The apparatus of claim 14, wherein said inclined slope curls back past vertical whereby said flow of water on said inclined slope forms a tunnel wave.

27. (Original) A water awning comprising a tunnel wave water sculpture forming a sheet flow of water having an airborne trajectory over an adjacent walkway or entranceway to form a tunnel-like passageway.

28. (Original) The water awning of claim 27, wherein said water sculpture comprises a substantially cylindrical flow surface.

29. (Original) The water awning of claim 27, wherein said airborne trajectory is partially or fully directed by an outer enclosure or housing formed around said walkway or entranceway.

30. (Original) A walk-through water sculpture comprising:

a platform or walkway for allowing pedestrians or vehicles to traverse a predetermined distance;

a flow surface disposed adjacent said platform or walkway and having at least a portion thereof comprising a generally inclined slope;

at least one flow source for providing a flow of water onto said flow surface such that said flow of water flows upwardly onto said inclined slope substantially conforming to the contours thereof; and

said flow surface farther comprising an upwardly rising section sized and configured so as to induce separation of said flow of water on said upwardly rising section and thereby causing at least a portion of said flow of water to assume an airborne trajectory over said walkway.

31. (Original) The sculpture of claim 30, wherein said flow of water assumes an airborne trajectory simulating a tunnel wave.

32. (Original) The sculpture of claim 30, wherein said airborne trajectory is partially or fully directed by an outer enclosure or housing formed around said platform or walkway.

33. (Original) A water sculpture, comprising:

an inclined flow surface adjacent a platform or walkway;

one or more flow sources for providing a flow of water onto said flow surface, said flow conforming substantially to said flow surface; and

said flow surface further comprising a upwardly rising section sized and configured so as to induce separation of said flow of water on said upwardly rising section, whereby at least a portion of said flow of water assumes a trajectory that simulates a naturally occurring wave form projecting over said adjacent platform or walkway to form a tunnel-like passageway.

34. (Original) The water sculpture of claim 33, wherein said upward rising section comprises a tunnel wave generator for creating a desired tunnel wave flow shape.

35. (Original) The water sculpture of claim 33, wherein at least two separate and independent flows are provided on said flow surface, each of said flows creating a desired flow shape or wave shape.

36. (Original) The water sculpture of claim 33, wherein the velocity of said flow is sufficient to cause said flow to ascend upward onto said flow surface and said upward rising section thereof, wherein by the force of gravity said flow is caused to return substantially upon itself in a downward arc to form a curling or spilling wave.

37. (Original) The water sculpture of claim 33, wherein said flow surface is contoured and has a concave-up or semicylindrical curvature.

38. (Original) The water sculpture of claim 33, wherein said flow of water has a relatively uniform thickness.

39. (Original) The water sculpture of claim 33, wherein said trajectory is partially or fully directed by an outer enclosure or housing formed around said platform or walkway.

40. (Cancelled)

41. (Cancelled)

42. (Currently Amended) A walk-through water sculpture comprising:

a reservoir of water;

a flow surface with at least a portion thereof having a generally upwardly inclined slope;

a platform or walkway adjacent said flow surface;

at least one water injector for providing a flow of water from said reservoir onto said flow surface along a flow path such that said flow of water flows upwardly onto said inclined slope and substantially conforms to said flow surface;

said flow surface having a shape adapted so that said flow of water curls over said platform or walkway and then flows off of said flow surface and splashes into said reservoir after a single pass over said flow surface, simulating a desired wave form.

43. (Previously Added) The water sculpture of Claim 42, wherein said water injector comprises a pump.

44. (Previously Added) The water sculpture of Claim 43, wherein said pump communicates with said reservoir.

45. (Previously Added) The water sculpture of Claim 44, wherein said flow path runs from said pump across said flow surface and to said reservoir.

46. (Previously Added) The water sculpture of Claim 44, wherein said platform or walkway is positioned in or above said reservoir.

47. (Previously Added) The water sculpture of Claim 42, wherein said flow path leads from said flow surface to said reservoir.

48. (Previously Added) The water sculpture of Claim 42, wherein said flow surface has a generally tubular shape adapted to simulate a tunnel wave.

49. (Previously Added) The water sculpture of Claim 48, wherein said flow surface comprises a substantially horizontal portion and a downwardly inclined portion, and said

substantially horizontal portion is disposed above said walkway and said downwardly inclined portion is disposed adjacent said walkway on a side of said walkway opposite said upwardly inclined portion.

50. (Cancelled)

~~50~~ ⁵¹ (Currently Amended) A water sculpture, comprising:

a reservoir for retaining water;

a flow surface with at least a portion thereof having a generally inclined slope;

a platform or walkway adjacent said flow surface; and

at least one pump for providing a flow of water from said reservoir onto said flow

surface;

said pump and flow surface adapted so that said flow of water flows upwardly onto said inclined slope substantially conforming to said flow surface and flowing over said platform or walkway and then back into the reservoir;

said flow surface and said reservoir being configured so that substantially all of said flow of water is directed from said flow surface to said reservoir after a single pass over the flow surface.

~~51~~ ⁵² (Previously Added) The water sculpture of Claim ~~51~~ ⁵⁰, wherein said platform or walkway is positioned directly above said reservoir.

~~52~~ ⁵³ (Previously Added) The water sculpture of Claim ~~51~~ ⁵⁰, wherein said reservoir is adapted to retain water in a substantially static state relative to said flow of water.

~~53~~ ⁵⁴ (Previously Added) The water sculpture of Claim ~~51~~ ⁵⁰, wherein said flow surface has a shape adapted to simulate a white water bore.

~~54~~ ⁵⁵ (Previously Added) The water sculpture of Claim ~~51~~ ⁵⁰, wherein said flow surface has a shape adapted to simulate a spilling wave.

~~55~~ ⁵⁶ (Previously Added) The water sculpture of Claim ~~51~~ ⁵⁰, wherein said flow surface has a shape adapted to simulate a tunnel wave.

~~56~~ ⁵⁷ (Previously Added) The water sculpture of Claim ~~56~~ ⁵⁵, wherein said platform or walkway extends through said tunnel wave.

~~57~~ ⁵⁸ (Previously Added) The water sculpture of Claim ~~56~~ ⁵⁵, wherein said tunnel wave forms an awning of a building.

58 59. (Previously Added) The water sculpture of Claim 51, wherein said flow of water is supercritical over at least a portion of said flow surface.

59 60. (Previously Added) The water sculpture of Claim 51, wherein said flow surface has at least a portion thereof having a generally downwardly inclined slope.

60 61. (Previously Added) The water sculpture of Claim 60, wherein said downwardly inclined slope directs said sheet flow of water into said reservoir.

61 62. (Currently Amended) A method for creating a walk-through water sculpture, comprising the steps of:

providing a flow surface having a substantially concave inclined portion;

providing a walkway or platform adjacent the flow surface;

providing a reservoir of water generally below the walkway or platform; and

directing a flow of water from the reservoir onto the flow surface so that substantially the entire flow of water substantially conforms to the flow surface and curls over the walkway or platform and into the reservoir.

62 63. (Previously Added) The method of Claim 62, additionally comprising the step of forming the flow of water into a sheet flow.

63 64. (Previously Added) The method of Claim 63, additionally comprising the step of imparting sufficient kinetic energy to the flow of water so that the flow of water is supercritical over at least a portion of the flow surface.

64 65. (Previously Added) The method of Claim 64, wherein the flow surface is substantially tubular.

65 66. (Previously Added) The method of Claim 65, additionally comprising the step of providing a pump communicating with the reservoir, said pump adapted to provide the flow of water.

66 67. (Previously Added) The method of Claim 66, wherein the platform or walkway is disposed in or above the reservoir.

67 68. (Previously Added) A tunnel wave water sculpture comprising:

a reservoir for retaining water;

a platform or walkway disposed above the reservoir;

a flow surface having a generally cylindrical portion extending generally around the platform or walkway, the flow surface not forming a complete cylinder; and

at least one water injector for directing a flow of water onto the flow surface at a location generally adjacent a first side of the walkway in a manner so that the water flows along the flow surface over the walkway and flows into the reservoir at a location generally adjacent a second side of the walkway.

~~68~~ ⁶⁷ ~~69~~ (Previously Added) The tunnel wave water sculpture of Claim ~~68~~ ⁶⁷, wherein the platform or walkway is supported by support members extending upwardly from the reservoir.

~~69~~ ⁷⁰ (Previously Added) The tunnel wave water sculpture of Claim ~~68~~ ⁶⁷, wherein water from the water injector flows once across the flow surface before splashing into the reservoir.

~~70~~ ⁷¹ (Previously Added) The tunnel wave water sculpture of Claim ~~70~~ ⁶⁹, wherein water in the reservoir is directed into the water injector.

~~71~~ ⁷² (Currently Amended) A tunnel wave water sculpture comprising:

a substantially arcuate flow surface having an entry portion and an exit portion;

a platform disposed beneath at least a portion of the arcuate flow surface so that the flow surface entry portion is disposed generally adjacent a first side of the platform and the flow surface exit portion is disposed generally adjacent a second side of the platform;

a water receiving basin generally below the platform;

at least one water injector for directing a flow of water onto the entry portion in a manner so that water flows along the flow surface over the platform to the exit portion, from which substantially the entire flow of water exits the flow surface and flows into the water receiving basin.

~~72~~ ⁷³ (Previously Added) The tunnel wave water sculpture of Claim ~~72~~ ⁷¹, wherein water from the water receiving basin is directed back to the water injector so as to be again directed over the flow surface.

~~73~~ ⁷⁴ (Previously Added) The tunnel wave water sculpture of Claim ~~72~~ ⁷¹, wherein the platform is supported by support members disposed in the water receiving basin.

~~74~~ ⁷⁵ (Previously Added) An apparatus for forming a tunnel wave through which people can pass, said apparatus comprising a flow surface, a platform or walkway and at least one nozzle for directing water onto the flow surface.

the flow surface having a concave curvature curling past the vertical back onto itself to form a partial cylinder having a longitudinal axis.

the platform or walkway extending through the partial cylinder and generally parallel to said axis.

75 ~~76~~ ⁷⁴ (Previously Added) An apparatus as claimed in claim ~~75~~ ⁷⁴, wherein the platform or walkway has opposing edges, each opposing edge spaced from the flow surface of said partial cylinder and wherein the partial cylinder provides a first opening adjacent the platform or walkway and serving as an inlet for water directed on said flow surface and a second opening adjacent the platform or walkway and serving as an outlet for water on said flow surface.

76 ~~77~~ ⁷⁴ (Previously Added) An apparatus as claimed in claim ~~75~~ ⁷⁴, wherein said partial cylinder comprises an opening disposed adjacent either side of the platform or walkway and wherein the walkway comprises supports extending through said opening.

77 ~~78~~ ⁷⁴ (Previously Added) An apparatus as claimed in claim ~~76~~ ⁷⁴, further comprising a water reservoir below the walkway, so that water can be drawn from the reservoir and directed through the nozzle(s) onto the flow surface to flow about the platform or walkway forming a water tunnel and then be deflected by said surface back to the reservoir.

78 ~~79~~ (Previously Added) A method of forming a water tunnel over a platform or walkway extending through the tunnel, said method comprising the steps of:

providing a concave flow surface over said platform or walkway which extends partially around a longitudinal axis of said platform or walkway;

directing water onto the flow surface with sufficient velocity to cause the water to conform to said flow surface and form a water tunnel about said platform or walkway by traveling less than 360 degrees about said axis, before leaving the flow surface by means of an outlet therefrom.

79 ~~80~~ ⁷⁸ (Previously Added) A method as in Claim ~~79~~ ⁷⁸ additionally comprising providing a reservoir, drawing water from the reservoir, directing the drawn water onto the flow surface, and returning the water from the flow surface to the reservoir.

80 ~~81~~ ⁷⁸ (Previously Added) A method as in Claim ~~79~~ ⁷⁸ additionally comprising forming a sheet flow of water, and directing the sheet flow of water onto the flow surface.

Please add the following new claims:

81 ~~82~~ (New) A tunnel wave water sculpture comprising:
a reservoir for retaining water;

a platform or walkway disposed above the reservoir;
a flow surface having a generally cylindrical portion extending generally around
the platform or walkway, the flow surface not forming a complete cylinder; and
at least one water injector for directing a flow of water onto the flow surface at a
location generally adjacent a first side of the walkway in a manner so that the water flows
along the flow surface over the walkway and flows into the reservoir at a location
generally adjacent a second side of the walkway;
wherein water from the water injector flows once across the flow surface before
splashing into the reservoir.

⁸² ~~83~~. (New) The tunnel wave water sculpture of Claim ⁸¹ ~~82~~, wherein the reservoir is generally uncovered at its top.

⁸³ ~~84~~. (New) The tunnel wave water sculpture of Claim ⁸² ~~83~~, wherein the walkway or platform is supported by supports extending upward from the reservoir.

⁸⁴ ~~85~~. (New) The tunnel wave water sculpture of Claim ⁸³ ~~84~~, wherein the flow of water comprises a sheet flow.